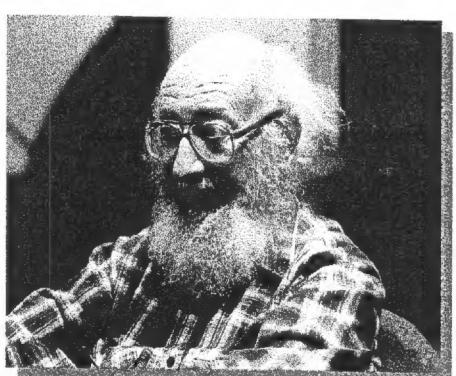


The Ramtop

Published by the Greater Cleveland Timex-Sinclair User Group

Late Fall

1994



The Amazing 2068 Emulator
More Dayton Computer Fest
Where Do We Go From Here?

Dayton Computer Show Report

Five members of our group, Gene Wilson, Greg Dupuy, Neal Elias, Jon Kaczor and myself travelled to Dayton for the 1994 Computerfest. This show seems to attract more people each year. The flea market area produced books, superanuated programs and hardware and many odd bargains. This show is becoming known as the poor man's COMDEX. It seemed that every other vendor was selling CD ROMS, and most CD's were quite heavily discounted. Single speed CD ROM players were being sold for as little as \$40, new. Hard drives were typically priced at \$200 for a 360 meg drive. VFAST modems were being sold for \$139 for internal versions and \$179 for external models by several vendors. One has to wonder if this is the future pricing of PC hardware? Microsoft put on a demonstration of the Chicago software, a next generation windows replacement, which their representative termed as a make or break product for them. In a packed auditorium, he was fairly candid about some of the past mistakes Microsoft had made in writing Windows. For example, he mentioned the terminal program, which was a module purchased by the company, should have supported some protocols other than Xmodem.

Afer the show on Saturday, we had a picnic at Tim Swenson's house in Dayton with about 30 Sinclair computer enthusiasts. Tim and his wife provided a good spread with entertainment on a steel drum. Among those attending were Paul Holmgren, Frank Davis, Bob Swoger and Gary Ganger. Bill Bell of Columbus, who wrote an excellent DOS for the TS-1000, was there too. Bill remarked that he uses a 386 now but it is a work machine which lacks the thrill and enthusiasm provided by the ZX machines. Bill still has his DOS available for anyone who is interested and his address is still the same as in old advertisements. Dave Lassov may have travelled the furthest to Dayton comming all the way from Tuscon Arizona. Dave is looking for the Clifford RS-232 Interface that allowed the Specterm program to run up to 9600 baud. Keith Watson of Semco demonstrated the TS-2068 emulator based on Gerton Lunter's Spectrum Emulation. Keith has not implimented several of the 2068 functions like SOUND and STICK. There are a couple of bugs that he is trying to work out. He hopes that he can support the Aerco disk interface as well. He can be contacted through John Impellizzeri's BBS, QBox-USA at 810-254-3946. There is no waiting for registering at this BBS so give him a call.

At the show Paul Holmgren demonstrated a QL outfitted with a hard drive and told me that an IDE hard drive interface is in the works. This ought to really help mainstream some of the QL hardware. Paul also showed me the SuperGold Card, which seems impressive although I really don't have the specs on it.

John Impellizzeri reports that QBox-USA is now running on the new QUBIDE hard drive interface with a 212 Mbyte drive. Just in time to celebrate our first year of operation! With the increase in storage space, they will be adding more message and file areas soon! Plenty of room for uploads now! Lots of new files for download too!

Qbox-USA is a BBS set up by QL enthusiasts for all Sinclair computer users.

There is no charge to use the system other than your cost for the phone call(Detroit, MI area). The BBS carries European Fidonet message echos for Sinclair computers. Available 24 hours a day, 300 thru 14400 baud. 810-254-9878

Dave Walker informs us that there will be a new release of C68 coming out in about a months time. He says he will put this (the RUNTIME 1 disk at least) on the QBOX network, or may, assuming it is wanted, put it up on Compuserve.

He further says he sends such products to Tim Swenson in the USA via internet email (which is free) and which might be a better route for getting into general circulation on the US side of the Atlantic.

Paul Holmgren tells us that his company, Mechanical Affinity, has just received our FIRST shipment of the NEW IDE hard drive interface for the QL (November). Be among the first to hang a IDE hard drive on your QL. Operating capacity is in excess of 200MEG of space allowed. Think of the possibilities. Rush to your phone, call us, 317-291-6002 or 317-471-8031

A NOTE FROM THE PRES:

Hello to you all! Here it is Fall again! The years seem to go faster and faster. Now I have bifocals as do a few of you. I was lucky enough to hitch a ride with Jon Kazor to the Dayton Computer Fest. It was great! I got a chance to see most of the good old Sinclair die hards! I didn't buy that much stuff but got some ideas. I already am anxious about going next year. I hope to all of you go too! One thing I can advise to you is don't stuff 3 adults in one room! The guy stuck with the cot is NOT a happy camper!

The 2068 Emulator

by Keith Watson

I have finished the code to make the Timex run under Gerton's Z80 emulator and finally debugged the Series One interface code to work with the Timex 2068. The final product is changed greatly from the one that I demonstrated down in Dayton. The machine stack is located where it is suppose to be at 6200H and not at high memory like it is in the Spectrum. Channels are located at 6840H initially and not like I had it in the demo at Dayton. Basic starts at 26709, initially, one byte lower than normal. This is due to the Series One code. I'm not sure that I can change this but am still trying. I was having trouble with the CLOSE routine because the Spectrum shadow ROM pages in at 1708H and not at 13A8H where it needs to with the Timex. To overcome this, I changed the Timex code to make a Hookcode call with Hookcode 32H to address 1708H in the shadow ROM; works rather well. At this time I have written no doc for the Timex running with Z80. There needs to be something written to explain why some programs may not work. This includes any that use the ram resident code or XROM code. The only program that I have found that doesn't work right is Timachine. Timachine will load and will compile properly but the shadow rom will no longer load programs. I was only able to load by use of the cassette interface. I have an interface now and the code that I have assembled will work to load programs through the parallel port if the user has a registered version.

Timex 2068 Emulation on a PC Using Z80
The following information compares the Timex 2068 emulator, running on an IBM compatible, with the real thing. Gerton Lunter's excellent Spectrum emulator, Z80 V2.01, is used with modified Timex 2068 and Series One Interface code to

make it work. To use it, you will have to replace the file, ROMS.BIN, in Z80-201.ZIP with one available for free in the EMULATOR area of QBOX-USA. Download file TX_2068.ZIP. QBOX-USA is a free BBS system dedicated to the QL and other Sinclair computers. The phone number is 1-810-254-9878. Features now available to the TIMEX 2068 emulated in Z80.

- ◆ 1. Microdrive Interface - up to 8 microdrives using an emulated Series One interface. CAT, FORMAT, ERASE, MOVE, VERIFY and MERGE are used with the microdrives. Read Gerton Lunter's Documentation for Syntax.
- ◆ 2. Serial Port - Send/Receive (SAVE/LOAD) data/programs over the PC serial ports; LLIST/LPRINT to the PC parallel ports; and SAVE/LOAD to disk. Read Gerton Lunter's Documentation for serial port emulation/operation.
- ◆ 3. Design your own commands - a feature of the SERIES ONE interface.
- ◆ 4. CLEAR # - Reset all channels to original and reclaim all memory used by the channels.
- ◆ 5. CLS # - Restores screen attributes to the original values.
- ◆ 6. OPEN #n;"x" - Creates channels for microdrive, serial port, and network. The network feature is not supported.
- ◆ 7. CLOSE #n - Closes a channel and reclaims memory used by it.
- ◆ 8. NMI saves - Save the memory state of the Timex 2068 to disc.
- ◆ Note: you cannot load Spectrum saved NMI (.Z80) files. Memory organization is similar but not the same.
- ◆ **Features not in Spectrum but working in the TIMEX 2068 emulation.**
 - ◆ 1. ON ERR - Traps errors and redirects program execution. SS+Extended mode "F".

- 2. DELETE - Works like a normal Timex 2068, CapShift "0".
- 3. FREE - Prints out the available basic memory, PRINT SS+Extended mode "A".
- 4. RESET, RESET *, RESET #n - Works just like the normal Timex, does nothing. Requires firmware written to take advantage of it. It could have worked much like CLOSE #n does in the Series One interface.
- **All features of the Timex 2068 emulator work except:**
- 1. STICK - Hardware support in the Z80 emulator is not available.
- 2. SOUND - Hardware support in the Z80 emulator is not available.
- 3. Access to the XROM memory and its TAPE routines cannot be done because the rom is not provide for. The same is true for the DOCK bank memory. This makes AROS and LROS programs unavailable as well as any of the extra VIDEO modes (normal display only).
- The second display file cannot be opened because the Z80 Spectrum emulator does not support it.
- 4. SAVE/LOAD/MERGE/VERIFY - Emulation of TAPE commands to disk is not supported. However, these tape commands are available for registered users only. They will work only with the parallel port connected to a cassette interface and with use of a Tape file, SA_LD.BIN (included in TX_2068.ZIP). This file must be loaded to ram from an emulated Microdrive or Serial Port to address 25282 dec, (62C2H). The normal location of the TAPE routines is in the XROM (see #3). The file, SA_LD.BIN, was setup to be loaded as a RS-232 file. Load it as CODE from Timex basic to address 25282 as: LOAD **"b" CODE 25282. Save it to a microdrive file as: SAVE **"m";1;"SA_LD" CODE 25282,1330. Refer to Gerton's documentation. You

must use REAL mode (F6) and your emulated Timex speed must be between 100% and 110% in order to load tape programs through the parallel port. Around 105% was best on my computer. One final note about "MERGE": the SA_LD.BIN file must be loaded in order to use the "MERGE" command for microdrive files or else an "Invalid I/O device" error will be displayed.

- 5. The RAM RESIDENT CODE is not in memory. There is no XROM to copy it from so the space is free for use of other code. However, this space is used by a special tape routine to SAVE/LOAD to the parallel port for registered users. See #4.
- 6. The Timex variable, Physical RamTop (P_RAM) has been relocated to 5CCCH and the first Series One interface variable (FLAGS3) is at 5CB4H. The other Timex Series One interface variables are located starting at 6856H. In contrast, the Spectrum Series One interface variables start at 5CB6H.
- 7. To OPEN a channel, you must use OPEN #n;"x". The letter n is the number of the channel and "x" can be "t", "b", "n", or "m". See Gerton's documentation. The important item here is that you must use a semicolon and not a comma in the command. The Timex syntax check passes the comma, thus not paging in the interface one rom. When a comma is used, an "Invalid I/O device" error is generated.
- 8. The screen color and ink color is white on blue, my favorite. If other screen colors are needed, let me know and I will try to get you the information on how to change the code.
- 9. BASIC programing starts at address 26709 dec. before enabling the Series One interface. It normally starts at 26710 dec in the Timex. I had to do this because of the way the Series One interface code expects memory to be organized. There is a one byte difference in length of memory,

from Channels to Basic, between the Timex and Spectrum. This may change in a future version if I can figure out how to work around it. This may cause problems with some programs. One such program may be Timachine. Timachine runs OK but basic programs to be compiled by Timachine will not load from the Series One interface. These programs can only be loaded from the Tape interface.

- ◆ 10. OUT 244,n will cause the border to change color. Many Timex programs have this instruction, written in machine code, to make sure certain memory chunks are enabled during program execution. Short of changing the program code, there is no solution for this.
- ◆ 11. All programs that I have tried did work with this Timex emulation. That includes HOTZ and HOTZ AROS (my favorite Timex programs), as long as the XROM bank, DOCK bank and ram resident code are not accessed. Of course, programs that make use of the STICK and SOUND command are not going to work. There may be many others that fail to work properly but I haven't used them yet. If you can help to make this Timex 2068 project better, let me know how and what to do. I personally would like to use OS-64 with this emulator but I don't have the ability to make it compatible with the XROM bank, DOCK bank or two displays files. If enough USA users will become registered users of Z80, maybe Gerton Lunter will consider making his emulator fully Timex compatible.

Keith Watson
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Changes in the Lunter Z80 Emulator

This emulator is known as the Spectrum/Spectrum 128 Emulator for the PC and it is the best one I have seen to date. There are those of you that have many Spectrum games and other Spectrum programs but (like me) can't set up two systems. For that matter, you may have sold your Sinclair stuff. I still have mine but was thrilled to be able to run Spectrum software and games on my color notebook and best of all: It runs just shy of 300% faster! (This is adjustable, of course.) ---- James G. DuPuy ----

FROM GERTON LUNTER:

There are a few major new things in version 3.

- It can load directly (in Real Mode) from Sound Blaster; the tape interface on the LPT port is not needed anymore (but still work fine, of course)
- It can load from .VOC sound sample files. This is most useful on slow machines, on machines with sound samplers other than a sound blaster, and for storing multi-load games on hard disk. Those .VOC files tend to be large (multiple Megs), but since the emulator only uses 1 bit per sample instead of eight, they can be compressed by a big factor, 20 is common.

- It emulates the Disciple and +D interfaces

- It emulates the Multiface 128 - useful for making compressed snapshots on tape/microdrive/disciple/+D, for poking infinite lives etc., and for loading Multiface snapshots without screen corruption.

- Much better compatibility; as far as I know, all compatibility problems are now solved. All

inofficial instructions are emulated. Inofficial flag emulation better.

- Emulator can emulate those tricky-timing hi-resolution color effects!

And a few lesser ones, such as: user defined joystick support, mouse support, support of breakpoints anywhere in the Spectrum memory, loading and saving of blocks directly into and from Spectrum memory,... err, can't remember more. Well, I've mentioned the most important ones surely. And a number of bug-fixes of course!

WHERE DO WE GO FROM HERE ?

It has been several years now that I have been doing the Ramtop and in retrospect, I would have liked to produce a better newsletter for everyone, but time and work have not allowed me to do more. As we all know our membership has been declining and participation in our meetings has also declined. We have to ask ourselves, what is next. I would like to turn the newsletter over to someone else but will continue on an issue to issue basis. We should consider if it is time to fold Ramtop, reduce the number of issues or exhort more contributions from the existing members. This is your newsletter ...What do you want to do? Let us know.

VIRAL PC TAXONOMY

Max found the following article for us, the documentation of "about viruses written by AJOY Software & available at 616-781-3764.

Basically there are two categories of viruses; The short term virus which is only active when you're running an infected file and the terminate and stay resident variety (TSR) which stays active from the time started until you reboot your computer.

SHORT TERM

When you start a program infected with a short term virus, it appears to run just as an uninfected program will. However, the virus portion of the program will usually be run first.

The virus will consider what is called the PRE-TRIGGER portion of its code. The pre-trigger for example can check for a certain date. Actually this can be anything. Some triggers will activate on or after a given date, start if the virus finds a specific program on your hard drive, or initialize after the program has been run a certain number of times.

If the virus finds it is time to do its deed, then its next action will be to execute what is called the TRIGGER ASPECT of the virus. This can also be anything from a valentine popping up on your screen to wish you a happy holiday, to wiping out all the files on your hard drive.

If the TRIGGER ASPECT is skipped, the virus will then consider what files to infect. Generally this will be a COM or EXE file. Some viruses will infect only one program each time they are run, some will infect many. If the program that is being examined is already infected, it will be passed by. The original portion of the program will start normally.

TERMINATE AND STAY RESIDENT

A TSR type of virus infects a program like the short term virus but its job is to leave a little piece of itself behind. This piece becomes an active, and permanent part of your PC's operating system. Typically, it will look for instructions your computer sends in response to you starting a program. When you start a program it infects that program before it is actually executed then executes it. This way it can continually infect all of the programs on your computer.

Your computer reads an image of a program from the disk into the computers' memory, when you select it, infected or not. It will give total control of the computer to the running program until

the program exits and you get back to the command line prompt.

All known viruses infect one or more of the following areas and are known as one of the following catagories:

Boot Sector Virus

When you turn on your computer, a small program is run before anything else. It is called the hard disk **Master Boot Record** or the **DOS Boot Sector** and it loads the basic things you need to have on your computer in order for it to work.. A Boot sector virus replaces the current boot program on a floppy or hard drive with itself and puts the original boot sector onto an unused portion of your disk. This way you will have an infected system even before an anti-virus program is run. When you access some other disk, the left behind boot sector virus will examine the boot sector of that disk. If it is not infected, it will infect it. The infected diskette waits for you to pass it on to one of your friends, where it will then infect their drive by corrupting its boot sector.

File Virus

A virus that infects one or more executable files on the system. Executable files include operation system files, **COM** files, **EXE** files, overlay files or another files which contain program code.

Polymorphic Virus

A self modifying virus that changes itself each time it infects a file or disk making its detection and removal difficult.

Stealth Virus

The newest and fastest growing variety of virus which hides itself and its action from detection. The latest version of this type of virus can even be self-encrypting so that it will not create signatures that can be identified.

Trojan Horse

A program that starts unexpected functions , sucha s displaying a message or erasing giles after being triggered by a specified condition.



Bill Young

We at the Sinclair Users Group just recently found out that Bill passed away about a year ago.

Bill would always lend a helping hand. He will be missed.

Our deepest sympathy to his family.

The ZX Spectrum 48/128 Emulator For IBM & Compatables: Z80 Version 2.01

Turn your PC into a real ZX Spectrum 48/128!
The fastest, most compatible and most complete
emulator available! Main features:

- Full Spectrum emulation, border, flash, beeper, Interface I, Microdrive in cartridge file, RS232 input and output redirection to file, COM or LPT, joystick support, 128K sound through Soundblaster or internal speaker, built-in monitor,
- Able to load ANY even protected or speed-saved program from tape, to save to tape, to redirect tape loads and saves to disk for easy file access,
- 2500 line English documentation, frequently-asked-questions file, PostScript file of doc, keyboard help screen, utilities to convert Spectrum screens to .GIF and .PCX files, convert snapshot files and tape files from 5 other Spectrum emulators to own format and vice versa, processor emulators to own format and vice versa, to read DISCIPLE and +D disks,
- Z80 processor emulation including R register, unofficial instructions, unofficial flags,
- Runs okay under DOS, Windows and DesqView,
- Full source code of emulator and utilities included!

Runs on any 640K PC; too slow for practical use on PC/XT's but fast enough on AT's; runs at about 100% on 16MHz AT's (can be slowed down on faster machines), uses VGA/EGA/CGA or Hercules.

This program costs US\$ 20. You will receive a 3.5" DD disk (5.25" disks on request), and you'll be kept informed about updates. Please send bank notes, name and address to:

Gertjan Lunter
P.O. Box 2535
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The Netherlands
If you send a cheque, please add US\$ 15. Please allow 4 weeks for delivery.

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